

710-45-072
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Ann Arbor, MI 48113-4001

313-994-1200

Dear Sir/Madam:

This report, along with the enclosed attachments, represents the final report for NASA Grant number NAGW-2645 to the Environmental Research Institute of Michigan. This research eventually resulted in two master's theses and contributed to eleven different journal articles. The results presented in the theses were published in two of these articles. Copies of the journal articles are attached, and include:

French, N.H.F., E.S. Kasischke, L.L. Bourgeau-Chavez, and D. Barry, Mapping the location of wildfires in Alaska using AVHRR data, **Int. J. Wildlands Fire**, **5**, pp. 55-61, 1995.

French, N.H.F., E.S. Kasischke, L.L. Bourgeau-Chavez, P. Harrell, and N.L. Christensen, Jr., Monitoring variations in soil moisture on fire disturbed sites in Alaska using ERS-1 SAR imagery, **Int. J. Remote Sens.** (in press), 1996.

French, N.H.F., E.S. Kasischke, R. D. Johnson, L.L. Bourgeau-Chavez, A.L. Frick, and S.L. Ustin, Using multi-sensor satellite data to monitor carbon flux in Alaskan boreal forests, *Biomass Burning and Climate Change*, edited by J.L. Levine, MIT Press, Cambridge, MA (in press) 1996.

Harrell, P., L.L. Bourgeau-Chavez, E.S. Kasischke, N.H.F. French and N.L. Christensen, Sensitivity of ERS-1 and JERS-1 radar data to biomass and stand structure in Alaskan boreal forest, **Remote Sens. Environ.**, **54**, pp. 247-260, 1995.

Kasischke, E.S., Fire, climate change, and carbon cycling in Alaskan boreal forests, *Biomass Burning and Climate Change*, edited by J.L. Levine, MIT Press, Cambridge, MA (in press) 1996.

Kasischke, E.S., L.L. Bourgeau-Chavez, N.H.F. French, P. Harrell, and N.L. Christensen, Jr., Initial observations on the use of SAR imagery to monitor wildfires in boreal forests, **Intern. J. Remote Sens.**, **13**, pp. 3495-3501, 1992.

Kasischke, E.S., French, N.H.F., Harrell, P., Christensen, N.L., Ustin, S.L., and Barry, D., 1993, Monitoring of wildfires in boreal forests using large area AVHRR NDVI composite data, **Remote Sens. Environ.**, **44**, pp. 61-71, 1993.

Kasischke, E.S., L.L. Bourgeau-Chavez, and N.H.F. French, Observations of variations in ERS-1 SAR image intensity associated with forest fires in Alaska, **IEEE Trans. Geosci. Remote Sensing**, **32**, 206-210, 1994.

Kasischke, E.S., N.H.F. French, L.L. Bourgeau-Chavez, and N.L. Christensen, Jr., Estimating release of carbon from 1990 and 1991 forest fires in Alaska, **J. Geophys. Res.** **100**, 2941-2951, 1995.

Kasischke, E.S., N.L. Christensen, Jr., and B.J. Stocks, Fire, Global warming and the mass balance of carbon in boreal forests, **Ecol. Appl.** **5**, 437-451, 1995.

Kasischke, E.S., L. Morrissey, J.B. Way, N.H.F. French, L.L. Bourgeau-Chavez, E. Rignot, J.A. Stearn, G.P. Livingston, Monitoring seasonal variations in boreal ecosystems using multi-temporal spaceborne SAR data, **Can. J. Remote Sens.** **21**, 96-109, 1995.

Sincerely,

Eric S. Kasischke
Principal Investigator